



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/577,471

04/27/2006

Yuji Iwaki

0756-7673

4788

31780

7590

06/17/2011

Robinson Intellectual Property Law Office, P.C.  
3975 Fair Ridge Drive  
Suite 20 North  
Fairfax, VA 22033

EXAMINER

WILSON, MICHAEL H

ART UNIT

PAPER NUMBER

1786

MAIL DATE

DELIVERY MODE

06/17/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,471	<b>Applicant(s)</b> IWAKI ET AL.	
	<b>Examiner</b> MICHAEL H. WILSON	<b>Art Unit</b> 1786	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-20 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-20 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20101222</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is in response to Applicant's amendment filed 19 April 2011, which amends claims 13-20 and 25-27 and cancels claims 1-9, 21 and 28-36.

Claims 13-20 and 25-27 are pending.

2. The objection to claims 30-36 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim is moot because Applicants canceled the claims in the reply filed 19 April 2011.

3. Applicant overcame the rejection of claims 1-3, 5, 6, 8, 9, 13-15, 17, 18, 20, 21, 25-33, 35, and 36 under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 2003/0218418 A9) in view of Seo et al. (US 2002/0086180 A1) and Shiratsuchi et al. (US 6,084,176) by amending the claims in the reply filed 19 April 2011.

4. Applicants overcame the rejection of claims 1, 4, 7-9, 13, 16, 19-21, 25, 26, 28, 30, 31, and 34-36 under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 2003/0218418 A9) in view of Seo et al. (US 2002/0086180 A1) and Shirota et al. (US 5,487,953) by amending the claims in the reply filed 19 April 2011.

5. Applicants overcame the rejection of claims 1-3, 5, 6, 8, 9, 13-15, 17, 18, 20, 21, and 25-33, 35, and 36 under 35 U.S.C. 103(a) as being obvious over Ikeda et al. (US 7,732,808 B2) in view of Shiratsuchi et al. (US 6,084,176) by showing that Ikeda et al. is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a).

Art Unit: 1786

6. Applicants overcame the rejection of claims 1, 4, 7-9, 13, 16, 19-21, and 25-31, and 34-36 under 35 U.S.C. 103(a) as being obvious over Ikeda et al. (US 7,732,808 B2) in view of Shirota et al. (US 5,487,953) by showing that Ikeda et al. is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 13-15, 17, 18, 20, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (WO 2005/048222 A1) in view of Shiratsuchi et al. (US 6,084,176).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome

by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Regarding claims 13-15, 17, 18, and 20, Yamazaki et al. disclose a light-emitting element comprising hole injection layer, hole transport layer, and a light-emitting layer a between a first and second electrode (page 70, lines 9-18). The reference discloses the hole transporting layer comprising 4,4'-bis[N-(1-naphthyl)-N-phenylamino]biphenyl (NPD) (page 70, line 26), and the hole injection layer comprising a mixture of MoO<sub>3</sub> and NPD (page 71, lines 1-3). However the reference does not explicitly disclose a carbazole compound with MoO<sub>3</sub> in the hole injection layer.

Shiratsuchi et al. teach carbazole compounds of instant general formulae (1) and (3) (compounds H-23 and H-24, column 23 and compound H-38, column 29) and as suitable compounds for the hole transporting layers (column 13, line 12 to column 14, line 5) used in a photoelectric device (column 2, lines 12-16). The reference also

Art Unit: 1786

teaches carbazole compounds as equivalent with the hole transporting compounds such as NPD, aromatic amine compounds having a star burst structure, and tertiary amine containing fluorene compounds for use in the hole transport layer (column 13, line 12 to column 14, line 5).

In view of Shiratsuchi et al.'s recognition that carbazole compounds and NPD are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute NPD of Yamazaki et al. with carbazole compounds such as H-23, H-24, or H-38 taught by Shiratsuchi et al. and thereby arrive at the present invention. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

Regarding claims 25 and 26, modified Yamazaki et al. disclose all the claim limitations as set forth above. Additionally the reference discloses a light-emitting device comprising the light emitting element (page 2, line 29 to page 3, line 8) and an electronic appliance comprising a display portion which includes the light-emitting element (figures 18A, 18B, 18C, and 19).

10. Claim 27 is rejected under 35 U.S.C. 103(a) as being obvious over Yamazaki et al. (WO 2005/048222 A1) in view of Shiratsuchi et al. (US 6,084,176) as applied to claims 13 and 15 above and further in view of Sato et al. (US 2003/0218418 A9).

Regarding claim 27, modified Yamazaki et al. disclose all the claim limitations as set forth above. However the reference does not explicitly disclose the thickness of the hole injection layer.

Sato et al. teaches a similar light-emitting element [0167]. The reference teaches the thickness of the anode buffer layer (hole injection layer) to be between 3 and 100 nm [0214].

It would be obvious to one of ordinary skill in the art at the time of the invention to make the hole injection layer of modified Yamazaki et al. thicker than 60 nm as taught by Sato et al. One of ordinary skill in the art would reasonably expect such a combination to be suitable because both reference teach hole injection layers in light-emitting elements.

The courts have held that “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), see also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.).

11. Claims 16, 19, 25, and 26 are rejected under 35 U.S.C. 103(a) as being obvious over Yamazaki et al. (WO 2005/048222 A1) in view of Shiratsuchi et al. (US 6,084,176) and Shirota et al. (US 5,487,953).

Regarding claims 16 and 19, Yamazaki et al. disclose a light-emitting element comprising hole injection layer, hole transport layer, and a light-emitting layer a between a first and second electrode (page 70, lines 9-18). The reference discloses the hole transporting layer comprising 4,4'-bis[N-(1-naphthyl)-N-phenylamino]biphenyl (NPD), and the hole injection layer comprising a mixture of MoO<sub>3</sub> and NPD. However the reference does not explicitly disclose a carbazole compound with MoO<sub>3</sub> in the hole injection layer.

Shiratsuchi et al. teach carbazole compounds of instant general formulae (1) and (3) (compounds H-23 and H-24, column 23 and compound H-38, column 29) and as suitable compounds for the hole transporting layers (column 13, line 12 to column 14, line 5) used in a photoelectric device (column 2, lines 12-16). The reference also teaches carbazole compounds as equivalent with the hole transporting compounds such as NPD, aromatic amine compounds having a star burst structure, and tertiary amine containing fluorene compounds for use in the hole transport layer (column 13, line 12 to column 14, line 5).

In view of Shiratsuchi et al.'s recognition that carbazole compounds and NPD are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute NPD of Yamazaki et al. with carbazole compounds such as H-23, H-24, or H-38 taught by Shiratsuchi et al. and thereby arrive



Art Unit: 1786

at the present invention. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

Shirota et al. teach carbazole compounds of instant general formula (4) as suitable compounds for the hole transport layer (column 4, lines 38-41, compound 3) used in an organic electroluminescent device (abstract). The reference teaches the compound to have high heat resistance capable enable high luminance with a high efficiency for a long time (column 1, lines 57-60).

It would be obvious to one of ordinary skill in the art at the time of the invention to use the carbazole compounds of Shirota et al. in the first layer of Yamazaki et al. One of ordinary skill in the art would reasonably expect the compounds of Shirota et al. to be suitable given that Shiratsuchi et al. teaches similar carbazole compounds to be equivalent and interchangeable with NPD and Shirota et al. teach the compounds are also hole transporting (column 4, lines 38-65). One of ordinary skill in the art would be motivated by a desire to have high heat resistance capable enable high luminance with a high efficiency for a long time (column 1, lines 57-60).

Regarding claims 25 and 26, modified Yamazaki et al. disclose all the claim limitations as set forth above. Additionally the reference discloses a light-emitting device comprising the light emitting element (page 2, line 29 to page 3, line 8) and an electronic appliance comprising a display portion which includes the light-emitting element (figures 18A, 18B, 18C, and 19).

12. Claim 27 is rejected under 35 U.S.C. 103(a) as being obvious over Yamazaki et al. (WO 2005/048222 A1) in view of Shiratsuchi et al. (US 6,084,176) and Shirota et al. (US 5,487,953) as applied to claim 16 above and further in view of Sato et al. (US 2003/0218418 A9).

Regarding claim 27, modified Yamazaki et al. disclose all the claim limitations as set forth above. However the reference does not explicitly disclose the thickness of the hole injection layer.

Sato et al. teaches a similar light-emitting element [0167]. The reference teaches the thickness of the anode buffer layer (hole injection layer) to be between 3 and 100 nm [0214].

It would be obvious to one of ordinary skill in the art at the time of the invention to make the hole injection layer of modified Yamazaki et al. thicker than 60 nm as taught by Sato et al. One of ordinary skill in the art would reasonably expect such a combination to be suitable because both reference teach hole injection layers in light-emitting elements.

The courts have held that “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), see also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of

Art Unit: 1786

percentages.”); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.).

### ***Double Patenting***

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 13-15, 17, 18, 20, and 25-27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10, 15 and 16 of U.S. Patent 7,732,808 B2 in view of Shiratsuchi et al. (US 6,084,176).

While the claims are not identical there is significant overlap in the claims. U.S. Patent 7,732,808 B2 teaches a light-emitting element comprising a light emitting layer

Art Unit: 1786

and a mixed layer of molybdenum oxide and an aromatic amine compound between a pair of electrodes (patented claim 1). The mixed layer is adjacent to the anode (patented claim 6). The patent also teaches an electronic appliance comprising the light-emitting element, such as a person computer, a television, or a navigation system (patented claim 15). These appliances necessarily comprise a display portion and a means for controlling light emission of the light-emitting element. However the patent does not explicitly teach a carbazole compound as the arylamine compound.

Shiratsuchi et al. teach carbazole compounds of instant general formulae (1), (2) with Ar of instant formula 2-1 (compound H-23, column 23), and (3) (compound H-38 column 29) with instant Ar 3-1 (compounds H-24, column 23) and as suitable compounds for the hole transport layer (column 13, line 12 to column 14, line 5) used in a photoelectric device (column 2, lines 12-16). The reference also teaches the carbazole compounds as equivalent and interchangeable with the hole transporting arylamine compounds of copending application (column 13, line 12 to column 14, line 5).

In view of Shiratsuchi et al.'s recognition that the carbazole compounds and the hole transporting compounds of patent are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the arylamine compounds of patent with carbazole compounds such as H-23, H-24, or H-38 taught by Shiratsuchi et al. and thereby arrive at the present invention. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency

Art Unit: 1786

is known to the prior art, the substitution of one equivalent for another is not patentable.

See *In re Ruff* 118 USPQ 343 (CCPA 1958).

Applicants' attention is drawn to MPEP 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent.

(underlining added by examiner for emphasis) *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Consistent with the above underlined portion of the MPEP citation, attention is drawn to column 7, lines 50-60 which clearly teach one of ordinary skill in the art to use a thickness of 130 nm for the mixed layer and an arylamine compounds as the hole transport material for the layer between the mixed layer and the light-emitting layer (column 7, lines 61 and 62).

Therefore, given the overlap between the present claims and the patented claims, it would have been within the skill level of, as well as obvious to, one of ordinary skill in the art to use the device which is both disclosed by U.S. Patent 7,732,808 B2 and encompassed by the scope of the present claims in view of Shiratsuchi et al. (US 6,084,176) and thereby arrive at the present invention.

Art Unit: 1786

15. Claims 13, 16, 19, 20, and 25-27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10, 15, and 16 of U.S. Patent 7,732,808 B2 in view of Shirota et al. (US 5,487,953).

While the claims are not identical there is significant overlap in the claims. U.S. Patent 7,732,808 B2 teaches a light-emitting element comprising a light emitting layer and a mixed layer of molybdenum oxide, an aromatic amine compound between a pair of electrodes (patented claim 1), and a layer between the light-emitting layer and the mixed layer comprising a hole transporting compound (third layer, patented claim 3). The mixed layer is adjacent to the anode (patented claim 6). The patent also teaches an electronic appliance comprising the light-emitting element, such as a person computer, a television, or a navigation system (patented claim 15). These appliances necessarily comprise a display portion and a means for controlling light emission of the light-emitting element. However the patent does not explicitly teach a carbazole compound as the arylamine compound.

Shirota et al. teach carbazole compounds of instant general formula (4) as suitable compounds for the hole transport layer (column 4, lines 38-41, compound 3) used in a organic electroluminescent device (abstract). The reference teaches the compound to have high heat resistance capable enable high luminance with a high efficiency for a long time (column 1, lines 57-60).

It would be obvious to one of ordinary skill in the art at the time of the invention to combine the carbazole compounds of Shirota et al. with the device of patent. One of ordinary skill in the art would reasonably expect the compounds of Shirota et al. to be

Art Unit: 1786

suitable in the mixed layer of patent given that the compound is taught as suitable for transporting holes in similar electroluminescent devices by Shirota et al. (column 4, lines 38-65). One of ordinary skill in the art would be motivated by a desire to have high heat resistance capable enable high luminance with a high efficiency for a long time (column 1, lines 57-60).

Applicants' attention is drawn to MPEP 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent.

(underlining added by examiner for emphasis) *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Consistent with the above underlined portion of the MPEP citation, attention is drawn to column 7, lines 50-60 which clearly teach one of ordinary skill in the art to use a thickness of 130 nm for the mixed layer and an arylamine compounds as the hole transport material for the layer between the mixed layer and the light-emitting layer (column 7, lines 61 and 62).

Therefore, given the overlap between the present claims and the patented claims, it would have been within the skill level of, as well as obvious to, one of ordinary skill in the art to use the device which is both disclosed by U.S. Patent 7,732,808 B2 and encompassed by the scope of the present claims in view of Shirota et al. (US 5,487,953) and thereby arrive at the present invention.

***Response to Arguments***

16. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment.

***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL H. WILSON whose telephone number is (571)270-3882. The examiner can normally be reached on Monday - Thursday 7:30-5:00 (EST), Friday 7:30-4:00 with alternate Fridays off.



Art Unit: 1786

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Chriss can be reached on (571) 272-7783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MHW

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1787